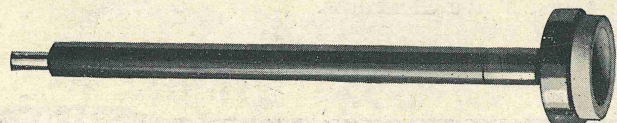


# THOMPSON-PLASTER X-RAY CO.

## CATAPHORIC

Electrode, with Rubber protection and Carbon base.



No. 1832

## FLEXIBLE SIGMOID

Electrode, constructed of pure block tin tubing, with hose end for flushing attachment.



No. 1833



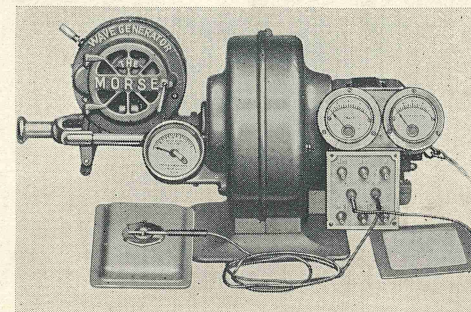
No. 1818

## Price List of Morse Internal Electrodes.

Catalog No.	Description	Code	Price
1820	Inter Uterine . . . . .	MAORIE	\$ 3.00
1821	Carbon Ball . . . . .	MARCUS	3.00
1822	Oblong Copper Ball . . . . .	MARGAY	3.00
1823	Sigmoid . . . . .	MARINE	3.00
1824	Prostatic . . . . .	MARMO	3.00
1825	Vaginal . . . . .	MARLIN	3.00
1830	Eye Cup (for Galvanism) . . . . .	MARLY	3.50
1831	Interrupter Handle with Moist Pad . . . . .	MASHE	3.00
1832	Cataphoric . . . . .	MASON	3.00
1833	Flexible Sigmoid . . . . .	MASSA	2.75
1818	Bifurcated Cords . . . . .	MANSON	2.50

Special cords priced according to length.

# MORSE WAVE GENERATOR



A Positive Action for Inducing Normal  
Muscular Movements

J. H. SMALL,  
4090 JENKINS ARCADE  
PITTSBURGH, PA.

## THOMPSON-PLASTER X-RAY CO.

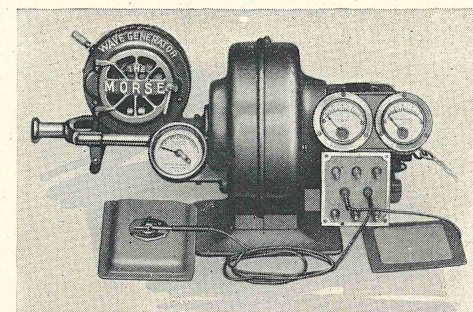
X-Ray and Electrotherapeutic Apparatus  
for the Physician and Dentist

LEESBURG, VIRGINIA

CHICAGO, ILLINOIS



## Morse Wave Generator



A Positive Action for Inducing Normal  
Muscular Movements

**T**HE Morse Wave Generator is an entirely new and original production, designed by Dr. Frederick H. Morse of Boston, who for thirty-two years has been one of the foremost practitioners and students of electro and physio-therapy and has been in a position to understand and appreciate all the various forms of mechanism used for therapeutic work.

This machine is capable of producing either the Direct or Alternating Current without a transformer or motor generator, (on either the Alternating or Direct Current), giving all the physiological and chemical polar effects as used with the commonly called galvanic current. This development is bound to be greatly appreciated where it can be combined with selected surging process, so essential in local paralysis, etc., etc.

The Morse Wave Generator is a simple, durable and practical form of apparatus which is a modification, with very many important improvements, of the original d'Arsonval Sinusoidal machine as made in Paris several years ago.



The Morse Wave Generator is a means of grouping a rapid impulse inductive current into variable surging wave motions, producing many different muscular movements for a great range of therapeutic indications, all of which are within easy manipulation of the operator, and pleasing in effect to patients.

The mechanical construction is such that it is capable of doing every day work in a physician's office for many years without impairment, there being no complicated gearing, wiring or switches.

The apparatus is so arranged that it is able to produce a synchronization of muscle movements in any part of the body, either voluntary or involuntary muscles, without danger of shock or burning sensation on the skin, using either the Direct or Alternating Current as may be indicated, the former for the special action of the Galvanic Current and the latter for exercise and massage effect, having in itself an induction current, being of considerable voltage and no amperage.

The above achievement is brought about by the insertion into the control part of the apparatus, different discs of various shapes which are known in mechanics as "Cams," all under the easy manipulation of a single lever and as far as we are able to ascertain is entirely new to the profession and promises to revolutionize physio-therapy as it is at present understood.

This style of construction is used so that when the proper Cam is selected any desired muscle movement may be imitated; it is possible to obtain an imitation of normal muscle movement of the various parts of the body, on either the Alternating or Direct Current, and in a very pleasing manner.

The principle of the Morse Wave Generator is one of inductive magnetism, whose various movements and wave lengths are controlled by a series of Cams making it possible to meet all requirements of muscular movements, and devoid of the objectionable burning sensation as with other similar apparatus.

Figure 1 represents a medium size Interstitial Uterine Fibroid situated posteriorly and easy of access. The Carbon Ball Electrode No. 1821 is employed, covered with either Absorbent Cotton moistened with some antiseptic solution, or use Antiseptic Gauze moistened to complete saturation, for good conduction.

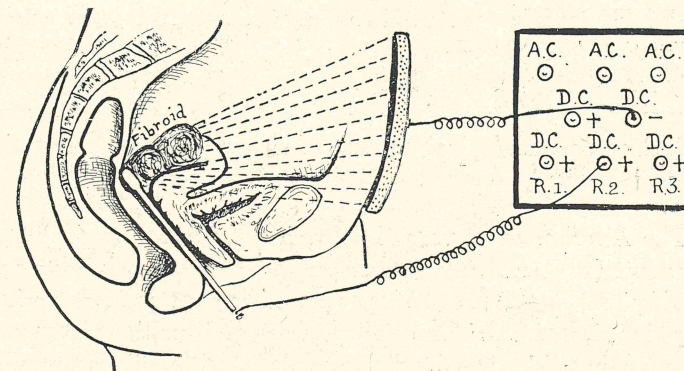


FIGURE 1.

Figure 2 illustrates the Copper Electrode No. 1822 inserted in the Rectum, for the treatment of Hemorrhoids. Moist Pad Electrode No. 1810 is placed in contact with the Abdomen.

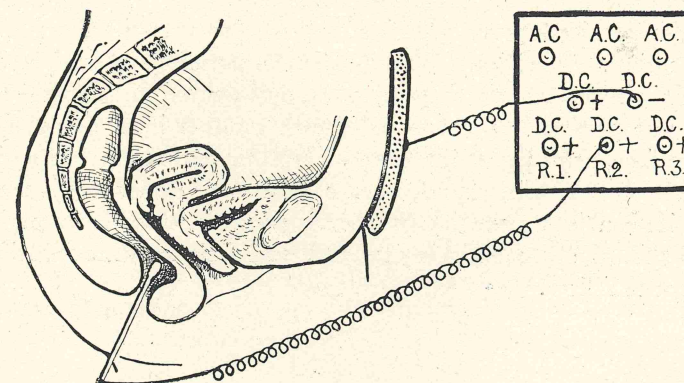


FIGURE 2.



For the intelligent treatment of Constipation, Obesity, Paralysis in all forms, Gastropstosis, Enteroptosis, Flat Foot, and the various joint affections. In fact, it meets nearly all the indications for physical and electrical needs except the X-Ray and High Frequency modalities.

The Direct Current produced by this generator is purely *uni-directional*, even when the surging effect is used, which simply means that the discharge is always in one direction and not reversed. This permits one to obtain all the well-known chemical and physiological actions of either positive or negative pole, as desired.

The Alternating Current is obtained from twelve (12) coils and twelve (12) permanent magnets, and with the driving motor revolving at the usual speed of 1750 per minute, 21,000 alternations are produced, and, as the revolving armature is made to approach the magnetic field when in action, a double impulse is obtained from every revolution.

By this method we secure a current of 42,000 impulses per minute — the “sine wave” is shortened like compressing a spiral spring — the wave lengths become so short as to become unrecognizable.

The fact that a Uni-Directional Measured Wave Surging Current can be employed, selecting the proper Cam for the muscle impulse required, gives a decided advantage over the Sinusoidal application. The Morse Wave Generator permits an equal period of rest with every contraction, using any one of the Cams—and the same principle applies equally well whether it is the muscles of the face, arm, leg or intestines. Normal action may be maintained. On the other hand, when a Sinusoidal Apparatus is used, with its constant reversing of current polarity, there is no period of rest for the muscles being treated, and fatigue and exhaustions are apt to follow.

Figure 3 illustrates the setting of Moist Morse Pads for Obesity.

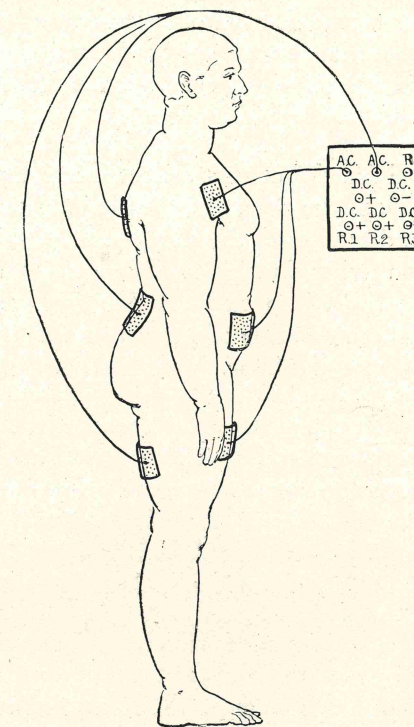


FIGURE 3.

Obesity, the “bugbear” of the physician, regardless of how treated, is a problem requiring much patience to bring about the desired results. The fact is clear—that the average Obese subject persists in incorrect living as regards diet and exercise, but wonderfully satisfactory results can be obtained, and the patient relieved by the combination of Proper Diet in conjunction with Vigorous Muscular Gymnastics as obtained with the Morse Wave Generator.



Many attempts have been made to imitate the physiological muscle action by mechanical application, the impulses being timed by a watch; but never before the advent of the Morse Wave Generator has a mechanical automatic form of apparatus been offered to the physician that could be depended upon to do precisely, as far as the physiological action is concerned, what is demanded of it.

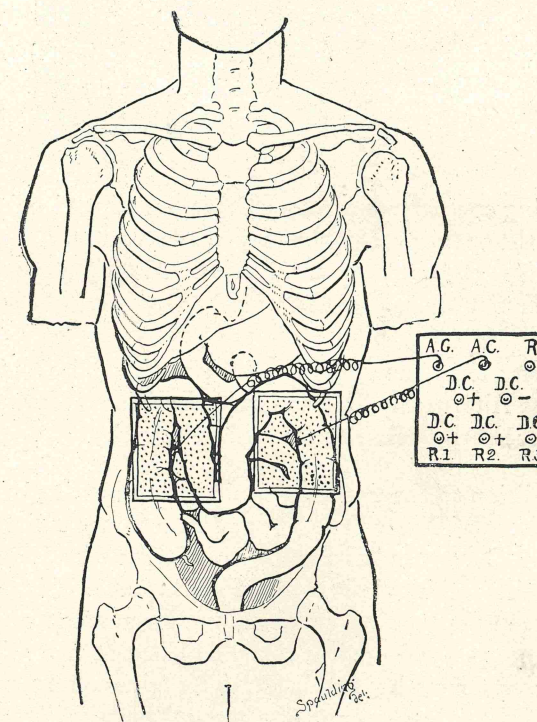
It is an established fact that Direct Current passes from the Positive to the Negative pole, and that it influences the fluids of the body in the direction of the flow. The physiological action of this current on living tissue is to elevate the temperature of the section through which it passes. At the Positive pole there will be an increasing accumulation of oxygen and acids—at the Negative pole, hydrogen and alkalis.

Physicians and Surgeons today realize the importance of caring for the human body, in health and disease, as a kind of mechanism instead of a complicated mass of protoplasm, and with the Morse Wave Generator we imitate Nature as nearly as possible in restoring normal cell activity, by definite Physical Therapeutics, rather than Sedatives, Cathartics, etc.

The general practitioner of medicine, who has been dependent wholly upon his pharmaceutical allies, and with whose methods he has been satisfied, has an ingrown feeling that it is illogical and presumptuous to step aside from the beaten path and to use methods which here-to-fore have been considered "irregular," and used only as weapons of the Charlatan, for making money.

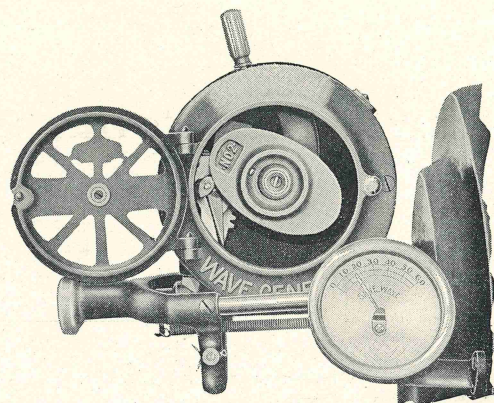
To the physician attempting to obtain definite therapeutic results through rhythmic mechanical or electrical measures, it seems rather a radical change from his former dependencies—the drugs and surgical instruments. Yet any physician who will familiarize himself with modern teaching of natural and physiological measures in his effort to restrain abnormal vital action, has made a great stride in his efficiency as a medical man.

FIGURE 4.  
ALTERNATING CURRENT APPLICATION.



Shows marked Tosis of the Transverse Colon. In addition to the two pads shown, there is a third one of larger size used on the Back.





Showing compartment where Cams are slipped off and on at the will of the operator, also showing sine wave meter, the indicator of which rises and falls according to the surging waves produced by the different Cams.

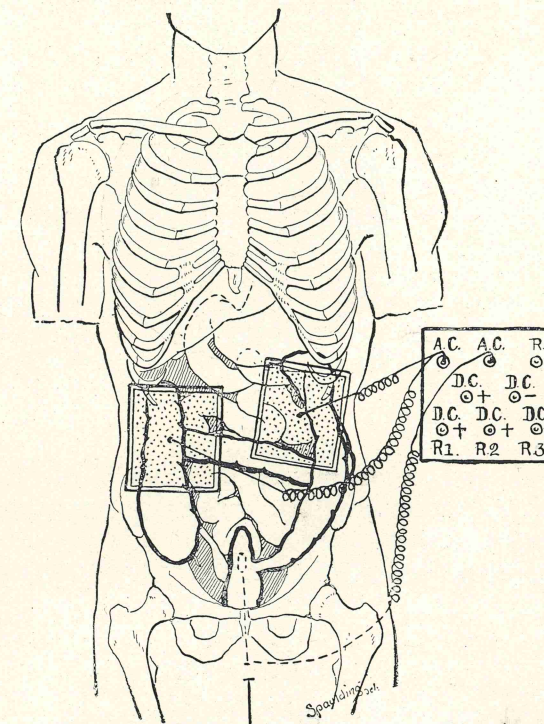
Any physician knowing the principle of exercise and massage, can use the Alternating Current from the Morse Wave Generator without necessarily being proficient in electricity.

In addition to the usual Galvanic action obtained from street lighting source of Direct Current or generator mechanism from the Alternating Current of 110 volts, a variation of voltage and milliamperage is obtainable at will. For instance: If it is desirable to have deep penetration and a minimum amount of superficial action of the pole selected, a current of one to five milliamperes and 175 volts may be obtained. This gives great penetration because of the extra amount of electrical pressure (voltage).

On the other hand, when a large amount of current is needed, as, for instance, where electrolysis is to be done, the apparatus is so designed that a smaller voltage and large milliamperage be utilized, four different varieties of combination being used to meet all requirements. The above development is bound to be greatly appreciated where it can be combined with selected surging process, so essential in local paralysis, etc., etc.

FIGURE 5.

ALTERNATING CURRENT APPLICATION

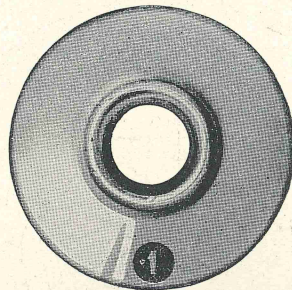


Illustrates a marked Prolapsus of the Transverse Colon, due to sharp angles at both the Hepatic and Splenic Flexures. Two Moist Pads are placed on the Abdomen, connected with a bifurcated cord to one of the poles, and connection from the opposite pole is made through the Rectum.



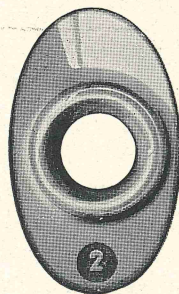
## Cams

When the Generator is put in operation the rapidly revolving armature and magnetic field are made to approach and recede from each other in automatic manner, the length and character of the waves, and the consequent muscular contractions are regulated by the shape of the special cam selected for the work to be accomplished.



CAM No. 1

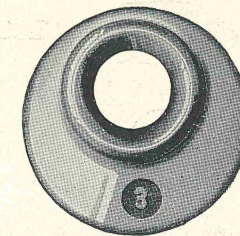
Produces a *cellular massage* by virtue of its rapid vibratory impulse without surge. This current is particularly indicated in muscular weakness, especially general inertia of the extremities, improving local metabolism and restoring muscular tone.



CAM No. 2

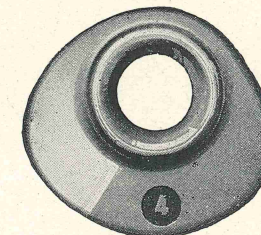
Produces a current of twenty-two surges per minute, with equal periods of contraction and rest. This current is particu-

larly indicated in infantile paralysis (chronic stage), paralysis of extremities, flatfoot, etc. Its effect is to cause an involuntary contraction of atrophied muscles at a rate to harmonize with, and to accentuate normal muscular activity.



CAM No. 3

Is especially useful over parts requiring a delicate massage, but deep penetration. This Cam is so constructed that the rise to maximum potential or peak of the surge is extremely gradual, producing a gentle contraction indicated for exercise of muscles whose natural function is associated with the organs of digestion.



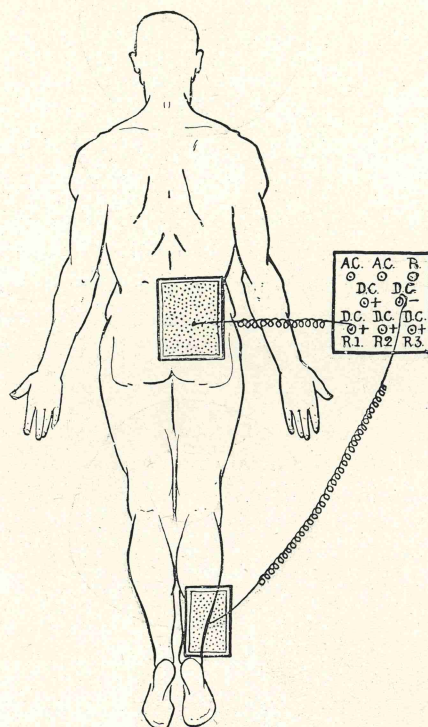
CAM No. 4

Produces a heavy contraction which is prolonged at the peak of the surge with abrupt diminution of intensity of short duration followed by an equally abrupt rise. This Cam is the most useful of all, as it is particularly indicated in the treatment of *intestinal stasis*, *stomach dilatation* and Constipation with subsequent complications, having like Cam No. 3, eleven surging wave impulses per minute. Modern medical literature states that Intestinal Stasis is a mechanical defect, the chief danger of which is the abnormal fixation or adhesion at a given point allowing sagging a portion of the bowel at either side, producing a kink causing obstruction which results in constipation and systemic disease due to congregation of waste matter and muscular inertia.



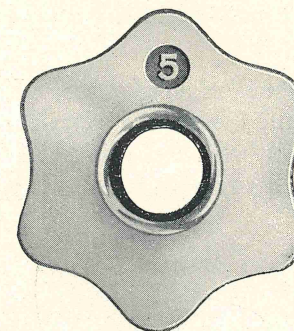
FIGURE 6.

## DIRECT CURRENT APPLICATION.



Sciatic Neuritis is usually caused by Intestinal Stasis either in the Secum or Sigmoid unless the history of injury to the nerve is not known to be otherwise. Treatment of the immediate pain from the Back down to the Ankle, as illustrated, is very effective, employing the Direct Current.

Cam No. 4 is constructed to synchronize with the normal peristaltic action of the gastro-intestinal tract to aid nature in the restoration of muscular tone and to exercise the muscles controlling these organs; at the same time to stimulate peristaltic action, increasing elimination and preventing toxic absorption and degeneration of tissue which would sooner or later necessitate the removal of that portion of the bowel, or some other surgical procedure.



CAM No. 5

Producing a surge the intervals of which are especially valuable in the treatment of Facial Paralysis, Enlarged Prostate, Joint Affections and Adhesions where rapid manipulation would be indicated, also for nose, ear and throat work where a delicate, easily tolerated massage is so often desired; produces sixty-six surges per minute.

Cams number 6, 7 and 8 give 33, 44 and 55 muscular contractions respectively, the indications for the use of which must necessarily be variable according to the pathology of the case.

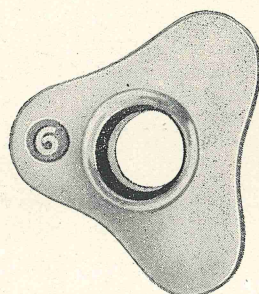
6 and 7 can be made to imitate in a very satisfactory manner, manual prostatic massage, using a surface electrode of at least 6x8 inches with any properly shaped and insulating prostatic electrode.



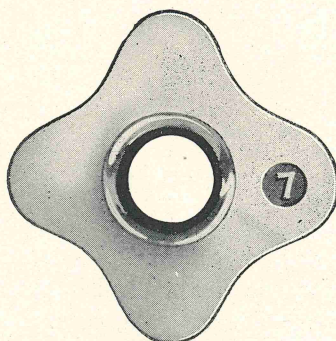
In affection of the knee and ankle and in the treatment of flatfoot, Cam number 8 when used vigorously gives a good imitation of normal muscular and ligamentous action in those regions.

In many of the cases spoken of as specially indicated by the use of Cams number 2, 3 and 4, where normal muscle movement is to be imitated, the use of either the 6, 7 or 8 Cam for two or three minutes preceding the use of the others, will cause a sudden invigoration of the circulation of the part which renders the condition susceptible to benefit when the regular Cam for the case is used.

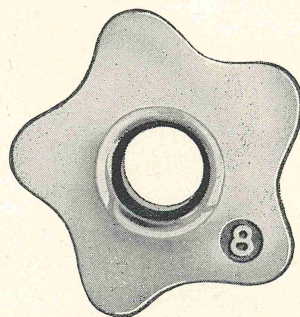
Without further suggestions for use, after the physician has once become acquainted with the physiological action of the different Cams, he will be in a position to select what is needed for his case better than any writer of books can tell him.



CAM No. 6



CAM No. 7

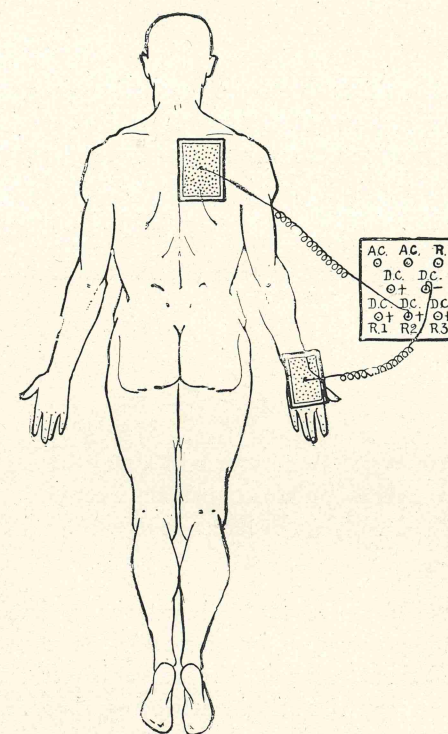


CAM No. 8

We can boldly assert without fear of scientific contradiction that the Morse Wave Generator offers a greater range of therapeutic application than any similar apparatus on the market today.

FIGURE 7.

DIRECT CURRENT APPLICATION



Neuritis of the entire Arm is treated with the Morse Wave Generator in much the same manner as Sciatic Neuritis. The best of results are obtained with a moderate current, as there is not a great deal of resistance in the Arm. Relief is obtained, in the usual case, in about eight minutes time.



## Special Features

A direct current without the use of any converter or transforming device from the alternating current line.

Imitation of normal muscle movements with complete absence of any burning sensations.

Simplicity of control, general design and resultant long life of the apparatus.

A variation of both amperage and voltage allowing deep penetration or superficial (galvanic) action, avoiding the usual unpleasant sensations so often prohibiting the use of Direct Current.

When ordering please state whether for Alternating or Direct current, also voltage, and type of Generator desired.

The Morse Wave Generator will always be shipped complete with the set of seven (7) Moist surface Electrodes and the pair of Connecting Cords, unless ordered otherwise. Catalog No. 1800 consists of:

The Morse Wave Generator, in gray enamel finish with nickel-plated trimmings, wound for operation on 110 volt, 60 cycle Alternating Current, without the galvanic attachment but with connecting cord and set of 8 interrupting Cams. Also—

- 1—No. 1807 Morse Manual of Instructions—
- 1—No. 1810 6"x8" Moist Surface Electrode.
- 1—No. 1811 5"x8" Moist Surface Electrode.
- 1—No. 1812 5"x6" Moist Surface Electrode.
- 1—No. 1813 4"x6" Moist Surface Electrode.
- 1—No. 1814 4"x5" Moist Surface Electrode.
- 1—No. 1815 3"x10" Moist Surface Electrode.
- 1—No. 1816 2½"x8½" Moist Surface Electrode.
- 1—No. 1817 Set of 2 (4 ft.) Connecting Cords.

Catalog No. 1800 Code MANGY Price \$325.00.

Catalog No. 1801 consists of:

The Morse Wave Generator, in gray enamel finish with nickel-plated trimmings, wound for operation on 110 volt, 60 cycle Alternating Current, for delivering the galvanic as well as the Sine Wave Currents, with connecting cord and set of 8 interrupting Cams. Also complete set of pad electrodes and connecting cords as included in Catalog No. 1800.

Catalog No. 1801 Code MAPLE Price \$375.00.

□ □ □

Catalog No. 1802 consists of:

The same apparatus as described under No. 1800, but wound for 110 volt Direct Current.

Catalog No. 1802 Code MANUS Price \$325.00.

□ □ □

Catalog No. 1803 consists of:

The same apparatus as described under No. 1801, but wound for 110 volt Direct Current.

Catalog No. 1803 Code MARAH Price \$375.00.

□ □ □

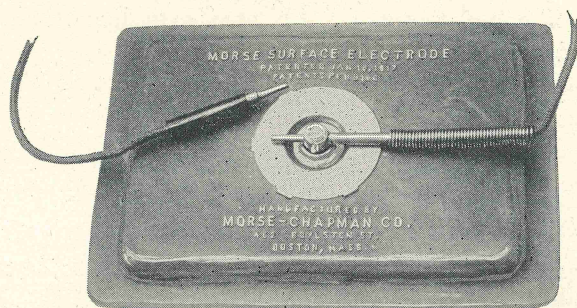
## Shipping Weights and Measures Covering the Morse Wave Generator

Net Weight in Lbs.	Net Weight in Kilos	Gross Weight in Lbs.	Gross Weight in Kilos	Dimen. Container in Inches	Dimen. Contained in Centimeters	Description of Containers
79	36.8	100	45.3	13½ x 20 x 27	34 x 51 x 68	1 Box



## Morse Surface Electrode

*The Last Word in Contact in Electro-Therapeutics*



The New Model of the Morse Moist Surface Electrode is composed of an asbestos compound for conduction, a moulded pure rubber back for protection, and a locking device on cord tip and electrode, so that accidental detachment is impossible. It is considered by experts to be the best moist conductor ever devised for the purpose.

Catalog No.	Description	Code	Price
1810	6 "x 8 " Moist Surface Electrode . . . . .	MALKIN	\$4.50
1811	5 "x 8 " Moist Surface Electrode . . . . .	MALLET	3.50
1812	5 "x 6 " Moist Surface Electrode . . . . .	MAMMER	3.00
1813	4 "x 6 " Moist Surface Electrode . . . . .	MANKIN	2.25
1814	4 "x 5 " Moist Surface Electrode . . . . .	MANCUS	2.00
1815	3 "x10 " Moist Surface Electrode . . . . .	MANFUL	3.00
1816	2½"x 8½" Moist Surface Electrode . . . . .	MANGER	2.00
1817	Set of 2 (4 ft.) Connecting Cords . . . . .	MANNIA	2.50
1818	Special Bifurcated Cord . . . . .	MANSON	2.50
1743	Morse Manual of Instructions . . . . .	INMORS	3.50

Special cords priced according to length.

## Miscellaneous Internal Electrodes



No. 1820

### INTER UTERINE

Pure copper end electrode for treatment of the various Inflammatory and Hemorrhoidic conditions of the interior of the uterus, where the astringent action of copper may be indicated to be used on the positive pole of the direct current with Cam No. 1, Morse Wave Generator.



No 1821

### CARBON BALL

Vaginal Electrode for the use on positive pole of the Direct Current for treatment of relaxed inflamed conditions and uterine fibroids. This electrode has a great range of applications in gynecology as it can be adapted to so many conditions. It is used by covering the ball end with moist absorbent cotton or gauze and, generally understood, with No. 1 Cam on Morse Wave Generator, unless for some special reason when Galvano-Massage effect is indicated.



No. 1822

### OBLONG COPPER BALL

Electrode for metallic electrolysis for either vaginal or rectal use as indicated in the treatment of Leukorrhea and Bleeding Hemorrhoids, with Cam No. 1, on Wave Generator.

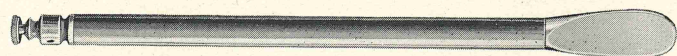




No. 1823

SIGMOID

Electrode to be used only with Faradic and Static Currents, and Morse Wave Generator on Alternating Current connection of that apparatus—never to be used on a Galvanic (or Sinusoidal) current on account of possible harm from electrolysis. It is especially valuable in treating those forms of Constipation when an impacted Sigmoid or sagging of the Descending Colon, is the cause, using a large Morse Surface Electrode over left side of the abdomen. As this electrode can easily be used without pain or unpleasant sensations during application it has been considered by best authorities to be the most important form of application for the treatment of a condition where surgery is of no avail and until the invention of the Morse Generator the muscular contractions obtainable from any other form of apparatus were too painful or feeble to be of consequence. Incidentally the patient is made to feel, "At last Doctor, I feel that I am having treatment just where the real trouble is." Use Cam same as any other portion of bowel, say Nos. 3 and 4.



No. 1824

PROSTATIC

Electrode to be used only on the Alternating Current connection with Morse Wave Generator, using Cam No. 2 or 6, which will give a good imitation of the manual massage in conjunction with the large Abdominal Morse Surface Electrode. This electrode can be used with Static Wave Current, however those

physicians who possess both the Wave Generator and Static have found by comparison of results that fewer treatments are required by the Morse Wave Generator.

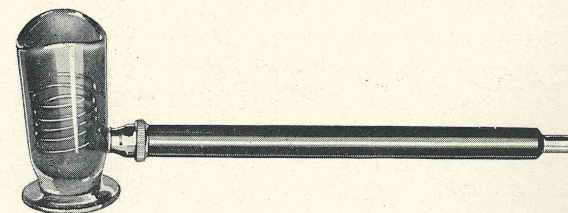


No. 1825

VAGINAL

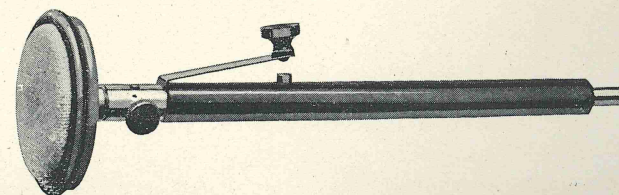
Electrode to be used only with Alternating Current connection on the Morse Wave Generator, with any of the Cams as may be indicated in the case at hand. This electrode may also be used with Faradic Coil or Static Machine.

GALVANIC EYE CUP



No. 1830

INTERRUPTER HANDLE WITH MOIST PAD



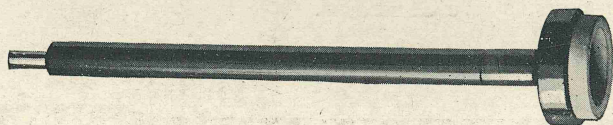
No. 1831



# THOMPSON-PLASTER X-RAY CO.

## CATAPHORIC

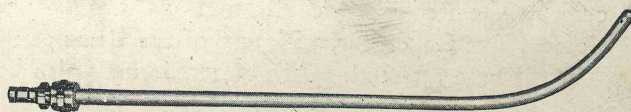
Electrode, with Rubber protection and Carbon base.



No. 1832

## FLEXIBLE SIGMOID

Electrode, constructed of pure block tin tubing, with hose end for flushing attachment.



No. 1833



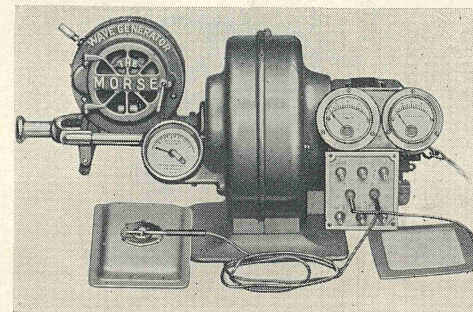
No. 1818

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1820	Inter Uterine . . . . .	MAORIE	\$ 3.00
1821	Carbon Ball . . . . .	MARCUS	3.00
1822	Oblong Copper Ball . . . . .	MARGAY	3.00
1823	Sigmoid . . . . .	MARINE	3.00
1824	Prostatic . . . . .	MARMO	3.00
1825	Vaginal . . . . .	MARLIN	3.00
1830	Eye Cup (for Galvanism) . . . . .	MARLY	3.50
1831	Interrupter Handle with Moist Pad . . . . .	MASHE	3.00
1832	Cataphoric . . . . .	MASON	3.00
1833	Flexible Sigmoid . . . . .	MASSA	2.75
1818	Bifurcated Cords . . . . .	MANSON	2.50

Special cords priced according to length.

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Muscular Movements

J. H. SMALL.  
4090 JENKINS-ARCADE  
PITTSBURGH, PA.

## THOMPSON-PLASTER X-RAY CO.

X-Ray and Electrotherapeutic Apparatus  
for the Physician and Dentist

LEESBURG, VIRGINIA

CHICAGO, ILLINOIS